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Inaugural dissertation
on
The congestive form of Typhus
Submitted to the Faculty
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The University of Pennsylvania,
for
The degree of Doctor of Medicine,
by
George Seild
Virginia.

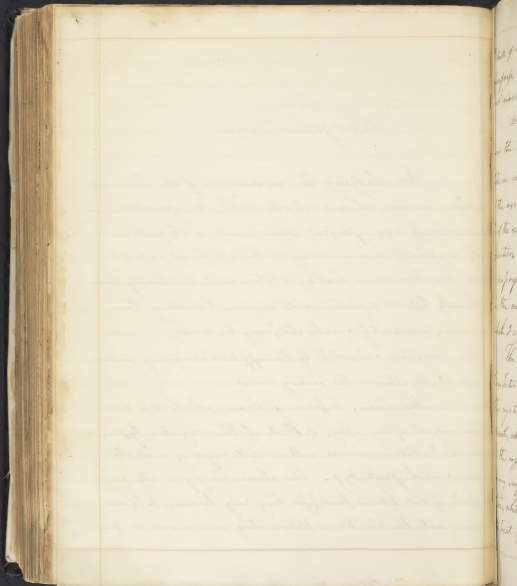
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ON
Congestive Fever.

In studying the mechanism of the human frame, we are at once struck with the grandeur, magnitude and perfect adjustment of its parts, and the regularity and harmony with which it performs its functions in a healthy state; and are thereby naturally led to reflect and inquire how easily these organs, so minutely constructed, may be deranged, and their functions subverted by the application of any morbid agent, together with rectifying causes.

The disease, or form of disease which is to be the subject of my essay, is that of the congestive type, and I shall commence with a short inquiry into its cause and pathology. This disease being generally a form of our bilious fevers, (for they may be said to be divided into the simple inflammatory and congestive,)



I shall of course refer it to the same causes, such as, dampness, heat, alternating with cold acting as exciting, and miasmata cause.

When the system is under morbid action from the impression of some noxious agent, it may take on either of the above mentioned forms of disease, if the agent alluded to be sparing and mild it will be of the simple form, if more active and in larger quantities, of the inflammatory and thus if neglected or improperly treated will assume the congestion, by far the most dangerous and difficult to manage; of which I shall say more when I come to the treatment.

The remotion of this disease being that of our bilious Intermitents, has been generally supposed act on the system either through the medium of the stomach, skin or lungs; but I am inclined ^{to think that} the stomach is the organ on which miasmata make their primary impression and secondarily on the vascular system, which I shall endeavour to show when I come to treat of the pathology.

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The stomach being so universally connected with the general system of sympathy, in a functional point of view, one of the most important organs in the system; and being that in which, on dissections, we most commonly find a greater degree of inflammation and other morbid appearances than any other, in most febrile affections; more particularly those excited by aerial poisons or the specific effluvia from an infectious disease, — it is reasonable at once to suppose that this of the three media which we have allowed the remote cause of the disease in question to act, is that one through which it most frequently institutes its morbid action.

When we consider that persons living in a miasmatic district are constantly inhaling the surrounding atmosphere and consequently the sulphuric exhalations with which, at some seasons, it is impregnated; it appears to me that a sufficient quantity of this noxious vapour would be inhaled to bring on disease at once almost without failure, but we have known instances

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to the contrary, that persons would have to be subjected to miasm some considerable period before they will be morbidly affected; which seems satisfactorily to prove that it does not act primarily on the lungs.

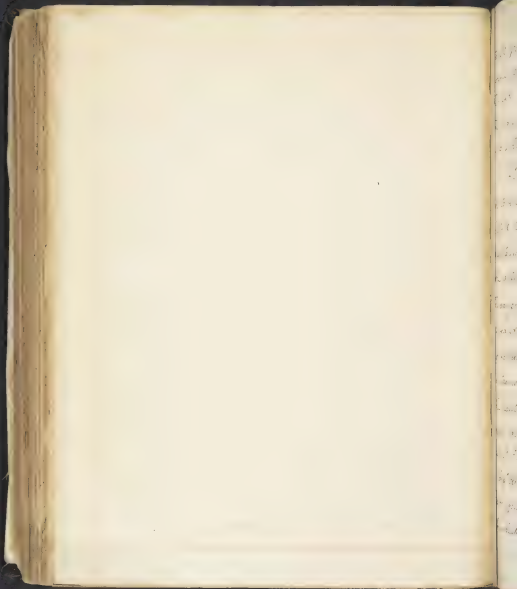
On the contrary the tardiness in the development of its effects, (miasmata) and frequently a total exemption from them though the system may be exposed to it; may in a measure be accounted for if we admit the stomach to be the primary seat of action.

In the first place, the miasm being conveyed to this organ (the stomach) entangled with the saliva its assimilation is in smaller quantities than if inhaled, &c. consequently be slowly accumulated; and secondly if the stomach is not in a fit situation to be acted on it passes off undisturbed and unfelt commingled with the feces. It appears from the observations I have made that the stomach should be in a state of emptiness or else irritable from crude ingesta, to be morbidly affected by miasmata, for hence persons have been exposed to it with impunity by previously taking into the stomach some

from 10 to 12 which were not seen during the
 day, and a few in some places as seen before
 a day, in the air to about 1000 feet, and
 sometimes higher, and some of them, respecting
 the number, were about 1000 in the air, in the
 same way as seen in some places and the same time
 of the day, which found it very hot and wet, as
 a precipitation, which early in the morning, I had
 seen in the air, the very first time, in the
 beginning of the day, from the expiration of the
 air in the water of the rising sun, and very soon
 was composed of the interesting particles in abundance
 in the air, in the rising of the sun, and the air.

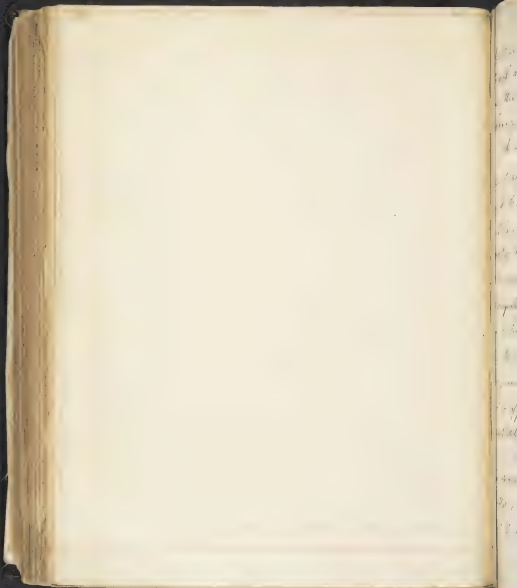
Adhesion in the preceding paper gives the cause
of the disease, however, and attempts to establish its nature
in the primary seat of action. I will now treat of
the pathology, just in passing, into the explanation of
the circulatory system.

By the term circulation, we mean that
process by which the blood is carried from the heart



to all parts of the body, and return again to its source, even in performing which circuit it is carried through two distinct sets of vessels the arteries and veins the former carrying out and the latter bringing it from all parts of the body to the point whence it started.

The quantity of blood in the human system seems not to be certainly known. That it is generally supposed to be about forty-eight pounds is the ^{most} which says Haller is contained in the veins and the remainder is portion in the arteries. This disproportion in the distribution of the sanguiferous fluid, the increased matter and the increased expansion of area extending of the veins, the consequently the diminution velocity with which the contained blood is propelled the nearer they approach the heart, are circumstances which will serve to explain and elucidate the Pathology of as various in- which I shall now attempt to describe having previously a brief description of the anatomical and physiological arrangement of the circulatory system, as it is alone from Anatomy and Physiology, or as knowledge of the



functions of the body in a healthy state that we are to mark and account for the changes that are manifested when they are changed, and thus the Pathology of any disease.

In accordance to what I have said, I shall proceed to say that the miasma, or virus poison, is conveyed to the stomach, by being swallowed, and here, as I have before stated constitutes its primary action, by exciting the nervous cause of this organ, and which action is transmitted to the heart and arteries through the medium of sympathy or nervous communication, and of course, stimulation or there is stimulation and if not too powerful will in the disease the inflammatory life but if it is too overpowering, and sympathy is stimulant action will not be apparent as the symptoms & excitement will be completely merged in those of congestion.

Dr. Denbigh, in his 4th work on Typhus fever, has described two modifications of congestion in the regular or that in which the symptoms of congestion are present without the slightest appearance of excitement, which I have



just described, and the irregular, or that in which the local congestions are not to such an extent, or the cause so offensive, as not to admit of a partial reaction, bearing the aspect of inflammation, rather than congestive fever. — But to return to the Pathology.

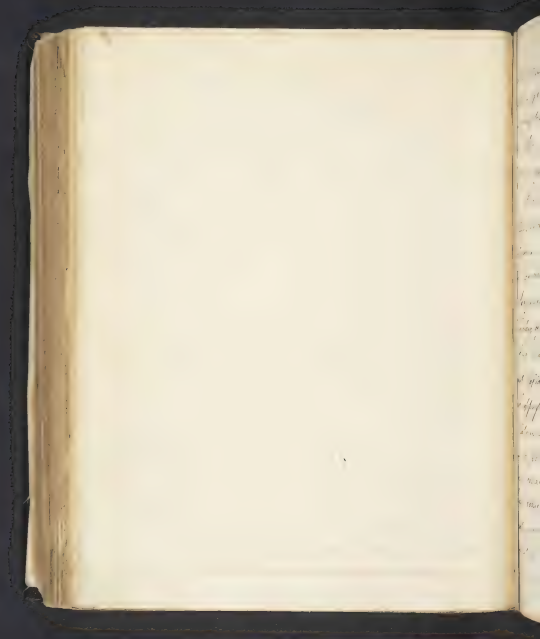
The blood is thrown in motion by the systole of the heart, and by which it is driven through the arterial system, being kept in action by the inherent property of contractility in those vessels they discharge it into the capillary vessels which are thought by some Physiologists to be a separate & distinct set, intermediate between the arteries and veins, and by others to be the minute ramifications of the arteries terminating in the veins. And here the impulse given to the blood by the heart ceases, but owing to the contractility of the arteries increasing the farther they proceed from the heart, and in proportion to their diminished caliber, the circulation is continued by an oscillatory motion peculiar to these vessels.

And this brings us to the venous circulation, which is much more languid than the arterial, owing to the



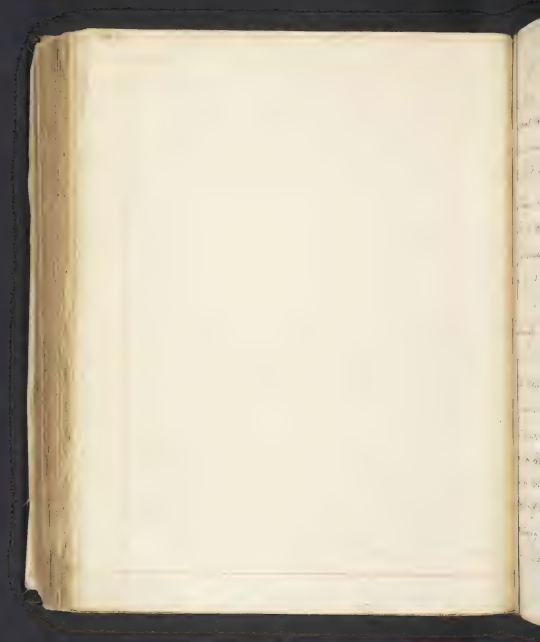
cause which I have mentioned above of the spasm, contractility, or resisting power in these vessels.

Hence we see they are naturally predisposed or liable to take on congestions, more especially if there is a torpor or inability in them to fulfil their duty on the surface coincident with a morbid excitement or oppression at the heart and large arteries. And if from this torpor a partial congestion of any of the viscera should take place, it will of course increase in ac. blood & also up. the morbid excitement at the heart, till it become so potent a barrier to the vis a tergo in propelling the blood, that finally, there is established a confirmed congestion of either the brain, carrying the patient off in a few minutes in a delirium resembling Apoplexy, or the Liver producing an intumescence and uneasiness about the region of that viscus, or of the intestines producing pain, swelling, discharge of bloody stools &c. — But congestions to this part may probably be more easily overcome than perhaps any other as the quantity of blood congested is not so great & therefore, the circulation may be more easily equalised,



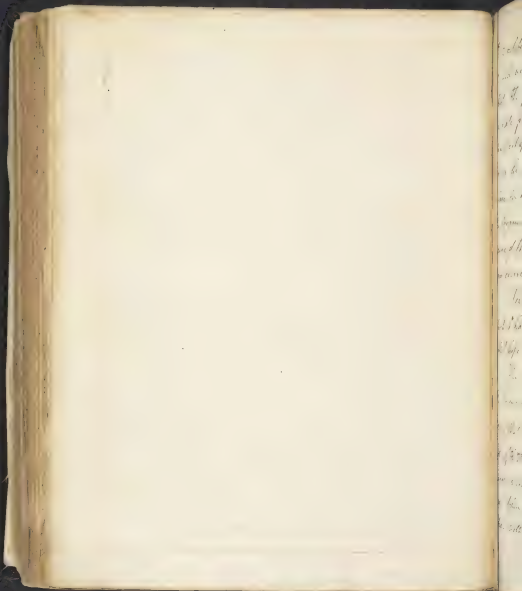
or the determination may be to the lungs ending in difficult breathing, oppression, or to the spleen attended with the general symptoms of disease in that organ, or from attacking some part that may be participated by idiosyncrasy. I shall in the present dissertation, consider the Pathology & treatment of it.

But the disease may be confounded with one almost totally, and frequently, certain and undeciding time of distinction cannot in easily discern where there is, but I will lay down the symptoms which are generally received as diagnostic. In the first place we should inquire into the history of the case, is the patient from a full habit and in high health, should be taken with sudden and unusual lassitude and giddiness, with a slow, laboring, and oppressed pulse, we may be sure the debility which he labours under is from oppression, or congestion, more or less local or general, as this would be gradually brought on from emaciation of the body, or exhaustion of vital power from some debilitating cause and the pulse hard and swift and weak, would be far from that strength which is inherent in the oppressed pulse.



It may also be asked in what degree differs from inflammatory fever but the distinction is in most cases plain and easily marked, in the one the pulse is small, weak, quick and cold compressed in the other full, quiet, hard and incompatible in its character with fever, there is a total absence of heat, the surface cool and clammy, in the inflammatory, external heat is particularly manifest, the skin hot and dry, the face in most cases highly flushed.

Coma— a state of insensibility is generally ushered in or made manifest by the following symptoms. A full heavy sensation approaching to subgenous stupor seems to ~~be~~ prefigure of the brain, rising to the patient the appearance of insensibility, the eye is dull, heavy, and watery, with an inanimate expression, and the face most part suffused with a reddish hue, the features shrunk, face pale and flaccid with a countenance expressive of anxiety, the skin over the whole surface is soft & a clinging appearance, moistened in almost all cases with a cold clammy sweat, having partially lost its sensitive



to subsistence; the extremities are considerably relaxed and weakened, in fact cases have been related in which the prostration was so great from the sudden commotion state produced that the patients have absolutely fallen when perhaps about their daily occupations, where they would lie if not assisted till a partial reaction took place in the system; the stomach is generally inanimate; the tongue though at first not much altered, in the course of the disease, if it should be of any duration, becomes covered with a darkish coloured fur.

Treatment— The Pathology and symptoms which I have laid down of the disease now in question, will I hope lead to a plain, correct and decisive treatment.

The mode of practice pursued in the treatment of this disease must be firm and decided, for such is the nature of it, that when once established, if the Physician is not possessed of the ^{most} confidence and discrimination, his patient, to his great surprise and mortification, may slip through his fingers before he is aware of the danger, at least until so late that with all his skill in the application of the same.



dis which his possession affords he will be compelled to be a willing spectator to the death of the patient whom he might possibly have saved if he had known that the disease was of the nature it proved to be at too late a period.

Thus we see the obscure and insidious character of this disease; and the great point of difficulty, is, as I have before said, to distinguish between apparent weakness, or debility from oppression, and real or that from abstraction, upon which distinction alone depends a correct practice.

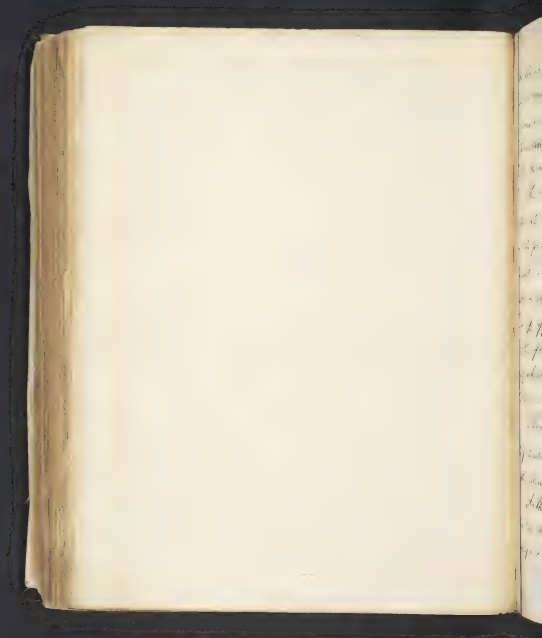
For, the two states of the system being diametrically opposite, the remedial agents also, of course are adapted, each to its respective symptoms; and those which would cure in the one case, would almost certainly hurt in the other. For instance let us suppose we were called to a patient labouring under the symptoms of congestion from which I have described and I were to mistake it for one of real debility, and were of course to exhibit stimuli to sustain & every dose adding to the evil which is thus far too frequent for the vital energy present, till finally the system sinking "sub pondere," kills the patient.



into an interminable carnage. We should, perhaps, have reflected on the symptoms and termination, & concluded of our error — but too late.

In pursuing my subject I shall enumerate the remedies which have been most generally used, and attended with the greatest success in our district of country, where this form of disease has been quite prevalent within the last two or three years. And I shall take into consideration first that of Bleeding:

This seems to be a hazardous remedy, with some, & I blush in mentioning the state of this as which it seems to be forbidden, saying, "that it should not be resorted to in that state of fever in which there is a typical engagement of the viscera," and even as partly agree with our illustrious author, but must by law be differ from him in prescribing it altogether, for when timely resorted to, that is, in the onset of the disease, or before the universal collapse comes on, and judiciously used, I believe it is certainly one of the most appropriate and certain equalizers of the circulation we can have recourse to, but which is by no means

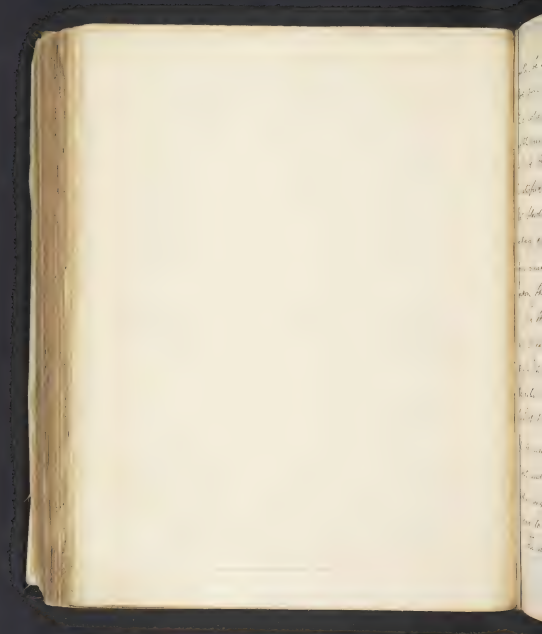


to be abused - is if we carry it too far the object we have in view is defeated, as the remedy will tend rather to increase the venous congestion which we aim to remove, by too suddenly accelerating the heart and arteries, and thereby disabling them to diffuse the blood.

This remedy may be prevented either general or local a topical anæsthetic and incision the latter seems to afford the most complete, or near it, as to the ligament, each of the neck and perhaps the whole heart if the brain is thus treated or over the right hypochondriacal region if the Liver is oppressed &c. Arteriotomy may also be resorted to, but this operation is seldom performed I believe unless there is apprehension of various consequences from sudden effusion of the brain.

Should the universal collapse come on before we see the patient, we should use stimulants, or opium combined with Calomel, of which Dr Armstrong speaks very highly.

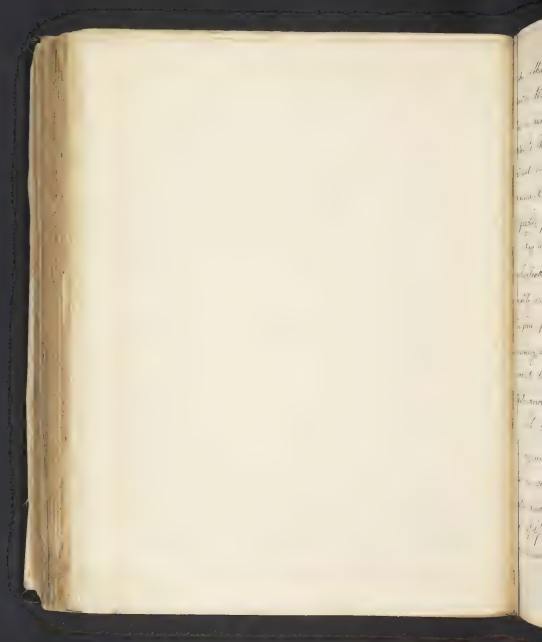
As there is in almost every form of disease stage of partial collapse we aim to discriminate between the partial collapse and the universal or critical one, which may give



usually, be done if not before, after the flowing of a little
 blood from the nose, which at the same time satisfies as to
 the correctness or incorrectness of the remedy: then, if after opening
 the vein and the evacuation of a small quantity blood,
 is found the pulse become fuller, freer, and softer, we may
 be satisfied that the collapse or debility is apparent and
 that blood letting is the proper remedy. But if on the
 contrary, after the abstraction of blood the pulse become
 steeper, smaller, and weaker, we must immediately aban-
 don the remedy as being inapplicable and dangerous.

In the treatment of this form of fever, the chief indica-
 tion is to equalize the circulation, or restore its balance, and
 change the disease into one of excremental or inflammatory
 character to be managed by depleting remedies. The remedy
 of which I have been speaking, is generally, a depleting one
 but it seems better to call it in this place an equaliser,
 if not indeed a stimulant, as the circulation, if it labour
 under congestion, must be first equalised before it can
 be said to be under actual depletion.

The next remedy or set of remedies which I shall con-



sider is that of Purgatives. They bear no inconsiderable part in the treatment of this fever. Blood-letting having been in most cases performed, we should resort without delay to the most active and certain purgatives, and calomel seems to be particularly adapted to this case on account of its having of requir^d a two-fold effect of speedily opening the bowels, and of salivation.

I say in most cases alone, because I would not be understood to mean that blood-letting is to be indiscriminately used in the commencement of all attacks of typhus: for in many cases the oppression may be so considerable, and the debility so great, that we are compelled to resort to stimulents or cordials and perhaps to stimulents and purgatives combined.

The bowels in this ^{fever} being generally torpid and much require larger doses and more frequently repeated than in common cases, as then should we hope of a regular and steady discharge from the bowels for the purpose of depleting the system and restoring a more healthy condition. The purgatives which have been most general



is used with us, on those which are commonly of a chlo-
 tic nature, either singly, or combined, or calomel and
 Jalap, Gamboge, Aloes, but the former of these given
 in small and successive doses until the system is
 under its specific effect, is an excellent remedy, when
 it has faded with a view to its purgative effect, and then
 it remains a visceral change of the system,
 and if the stage of excitement is not manifest
 from the bleeding, and purgative effects of the medicines
 above mentioned, we shall now see it happily developed
 along with, and perhaps merged in, the mercurial excite-
 ment, and then we may be said to have removed,
 strictly speaking, the congestion character of the disease,
 and converted it into one of inflammatory type to be
 managed by a general antiphlogistic treatment.

Blisters are frequently of service in congestion ap-
 plying over the part supposed to be congested, as also are
 sinapisms and other rubefacients which are used to dis-
 sminate to the surface. After the system has been
 evacuated by bleeding and purging, there may still be

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a tardy restoration of the balance of the circulation in consequence of the heart and arteries having been previously in a partially inactive or opposed state, which may require the exhibition of stimulants or remedies to encourage their action, or as I have before observed, this treatment may probably be alternated with depleting remedies, the carbonas Ammoniac in small and frequent doses is a favourite remedy of Dr Armstrong to meet this indication - and might not an emetic be serviceable in producing this action, as it is well known to have the effect of determining the fluids to the surface and thereby would aid in equalising the circulation.

